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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/622,660 | 07/21/2003 | Takashi Yamaguchi | 2018-743 | 3836 |

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| EXAMINER |
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BETTS JR, ROGER D

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| ART UNIT | PAPER NUMBER |
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1723

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/622,660 | | YAMAGUCHI ET AL. | |
| | Examiner | | Art Unit | |
| | Roger D. Betts Jr. | | 1723 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09/06/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>08/09/05</u> . | 6) <input type="checkbox"/> Other: _____ |



Claim Rejections - 35 USC § 102

1. Claims 1-4, 9-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Thompson (U.S. Patent No. 5,132,013). In view of Claim 1, Thompson (013) discloses a filter apparatus comprising a fluid passage body that has an inner surface defining a bore (Fig. 1, outer portion 10 (filter sits within bore)); and a filter that fits in the bore of the fluid passage body (Fig. 1, 18) having an inlet (Fig. 1, 20) having a plurality of holes (Fig. 1, 42) defining a tubular fluid passage (Fig. 1, comprising 18 and 45), wherein the closed end section (Fig. 1, 22) is shaped that a cross-sectional area between an outer surface of the closed end and inner surface of the fluid passage body increases gradually in a fluid flow direction (Fig. 1, location between the outside of filter screen 18 and the beginning of the first end of the outlet pipe 48, all of which enclosed with the filter assembly 10), wherein inlet section defines an opening (Fig. 1, 20) on an opposite end of the filter with respect to the closed end section (Fig. 1, 22) and fluid passes through the inside of the filter section, passes through the plurality of holes, and flows through the tubular fluid passage (Col. 4, 65-68; Col. 5, 1-6) and (Fig. 1, comprising 18 and 45)(claim 1). Thompson (013) discloses a filter apparatus wherein the closed end section is hemispherically shaped and decreased toward the fluid flow direction (Fig. 1, 22) (claim 2), wherein closed end section is conically shaped (Fig. 1, 22) (claim 3).

Thompson (013) discloses a filter apparatus comprising a fluid passage body that has an inner surface defining a bore being a fluid passage body (Fig. 1, 10); and a filter that

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fits in the bore of the fluid passage body (Fig. 1, 18) having an inlet (Fig. 1, 20) having a plurality of holes (Fig. 1, 42) defining a tubular fluid passage (Fig. 1, comprising 18 and 45), wherein the hole diameter is larger at a radially outer side of the filter section (Col. 3, 38-42) wherein inlet section defines an opening (Fig. 1, 20) on an opposite end of the filter with respect to the closed end section (Fig. 1, 22) and fluid passes through the inside of the filter section, passes through the plurality of holes, and flows through the tubular fluid passage (Col. 4, 65-68; Col. 5, 1-6) and (Fig. 1, comprising 18 and 45)(claim 4).

Thompson (013) also discloses a filter apparatus in which the closed end section is shaped so that the cross-sectional area between an outer surface of the closed end section and the inner surface of the fluid passage body increases gradually in a fluid flow direction (Fig. 1, location between 42 and 48) (claim 9), wherein the fluid passage body has an inner surface defining a bore (Fig. 1, outer portion 10 (filter sits within bore)) being a fluid passage and filter fitting within bore of fluid passage (Fig. 1, outside of 10), wherein the filter has a plurality of holes (Fig. 1, 42) to filter the fluid and closed end section (Fig. 1, 22) integral with the filter section, in which the inlet section (Fig. 1, 20) defines an opening on the opposite side of the filter, and flow flows from the opening of the inlet section to the fluid passage (claim 10). Thompson (013) discloses fluid passage body that has an inner surface defining a bore and filter fitting with bore of fluid passage body, wherein the filter includes an inlet section fixed in the bore of a fluid passage body; filter section (Fig. 1, 18) integral with inlet section (Fig. 1, 20) and a plurality of holes for filtration and a closed end (Fig. 1, 22) section integral with the filter

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section, wherein the fluid flows from an opening of the inlet section and flows into an inside of the filter section (Col. 4, 65-68; 5, 1-13) (claim 11). Thompson (013) also discloses a filter apparatus wherein the fluid passage body is a fluid inlet (Fig. 1, 10) (Col. 4, 65-68; 5, 1-13) (claims 12-15)

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (013) in view of Glaser (U.S. Patent No. 5,449,459). Thompson (013) discloses a filter apparatus comprising a fluid passage body that has an inner surface defining a bore being a fluid passage body (Fig. 1, 10); and a filter that fits in the bore of the fluid passage body (Fig. 1, 18) having an inlet (Fig. 1, 20) having a plurality of holes (Fig. 1, 42) defining a tubular fluid passage (Fig. 1, comprising 18 and 45), wherein the hole diameter is larger at a radially outer side of the filter section (Col. 3, 38-42) wherein inlet section defines an opening (Fig. 1, 20) on an opposite end of the filter with respect to the closed end section (Fig. 1, 22) and fluid passes through the inside of the filter section, passes through the plurality of holes, and flows through the tubular fluid passage (Col. 4, 65-68; Col. 5, 1-6) and (Fig. 1, comprising 18 and 45)(claim 4).

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However, Thompson (013) fails to disclose a plurality of tapered holes increasing towards the outer side of the filter section (claim 5), wherein each of the holes is stepped to have diameter increasing towards the outer side of the filter section (claim 6), wherein the plurality of holes are in different shapes (claim 7), wherein the plurality of holes is shaped in two shaped among an approximate hemisphere, a straight and tapered bore (claim 8). Glaser (459) discloses a plurality of holes (Fig. 2, 48; Col. 3, 56-58) tapered to have diameter gradually increasing towards the outer side of the filter section (Fig. 8, 108)(claim 5), wherein each of the plurality of holes is stepped to have the diameter gradually increasing toward the outer side of the filter section (Fig. 10, 116,118,120)(claim 6), wherein the plurality of holes are shaped in different shapes (Fig. 10, 116,18,120)(claim 7), wherein the plurality of holes is shaped in two shapes comprising a straight bore (Fig. 7, 102) and a tapered bore (Fig. 7, 104) (claim 8). It would be obvious to one of ordinary skill in the art at the time of the invention to manufacture the Thompson (013) invention in view of Glaser (459), wherein the different array of holes and their orientation minimize the resistance to flow through the wall of the filter wall support due to the flow passage length, promotes laminar flow through and on both sides of the filter wall support, and minimizes the pressure drop across the filter support and any back pressure on the upstream side of the filter support.

Response to Arguments

3. Applicant's arguments with respect to claim 1-11 have been considered but are moot in view of the new ground(s) of rejection.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roger D. Betts Jr. whose telephone number is (571) 272-8153. The examiner can normally be reached on Monday-Friday from 7:30 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700